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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 832,492	04/11/2001	Yiqiang Li	1983P	9971

7590

12/16/2002

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EXAMINER

RAHLL, JERRY T

ART UNIT      PAPER NUMBER

2874

DATE MAILED: 12/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/832,492

Applicant(s)

LI ET AL.

Examiner

Jerry T Rahl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☒ Claim(s) 1, 12 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Drawings*

1. The drawings submitted have been reviewed and determined to facilitate understanding of the invention. The drawings are accepted as submitted.

### *Specification*

2. The disclosure is objected to because of the following informalities: On page 8 of the specification, the second port is mistakenly referred to as being element 106. The correct element showing the second port is 104. Appropriate correction is required.

### *Claim Objections*

3. Claims 1, 12 and 13 are objected to because of the following informalities: the claims refer to the second and third birefringent materials having the longitudinal axis. It is not completely clear that the first, second and third birefringent materials are meant to have the same longitudinal axis. The claims could be misinterpreted to mean that the individual materials have their longitudinal axes and that the axes need not be the same. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-  
(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

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(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

5. Claims 1-22 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,366,402 to Li.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

6. Li describes an optical circulator having a first port (102), a second port (104), a third port (106), a first birefringent material (110) coupled to the first and third ports having a longitudinal axis, a transverse direction, a displacement direction at a 45 degree angle from the transverse direction and a first length, a first rotator pair (112) having a first rotator and second rotator where the first rotator rotates a polarization in a first direction and the second rotator rotates a polarization in a second opposite direction, a second birefringent material (118) having the same longitudinal axis and a second displacement direction perpendicular to the longitudinal axis, a second rotator pair (122) ) having a third rotator and fourth rotator where the third rotator rotates a polarization in the second direction and the fourth rotator rotates a polarization in a the first direction, a third birefringent material having the same longitudinal axis and a third displacement direction at a 45 degree angle to the transverse direction where a first optical path is established from the first port to the second port and a second optical path is established from the second port to the third port, a polarization beam deflector (114) for altering the direction of the first and second optical paths between the first rotator pair and the second birefringent

material, a first collimator coupled to the first port and third port including a C-lens and a second collimator coupled to the second port including a C-lens (see Figures 3, 5 and 6, Col 3 Ln 50-Col 4 Ln 30, Col 4 Ln 45-Col 5 Ln 36 and Col 6 Lns 1-27).

7. Li further describes the rotators consisting of latching type garnet components.
8. Li further describes the signal as being decomposed into a first portion having a first polarization and a second portion having a second polarization where the second birefringent material allows the first polarization state to be transmitted undeflected and the second polarization state to be transmitted after being walked off by a first distance.
9. Li further describes optical fibers included in the ports.
10. The method of Claims 13-22 is embodied by the device described above and fully described by Li.

### *Conclusion*

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry T Rahll whose telephone number is (703) 306-0031. The examiner can normally be reached on M-F (8:00-5:30), with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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Jerry T Rahll  
December 9, 2002

*Allen*